DNV·GL

Certificate No:
TAD00000D5

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Hoisting, Rotation and Pipehandling Equipment

with type designation(s)
FRH160CER/CHR Rotary Deadline Anchor

Issued to
DRECO Energy Services ULC - Rig Systems
Edmonton AB, Canada

is found to comply with
Det Norske Veritas' Offshore Standard DNV-OS-E101, "Drilling Plant", October 2009
API Spec 8C, Specification for Drilling and Production Hoisting Equipment (PSL 1 and PSL 2), Fifth Edition, April 2012
NORSOK Standard R-002 Lifting equipment, Edition 2, September 2012

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

This document consists of 3 pages and replaces D-6182

This Certificate is valid until **2016-12-31**.

Issued at **Houston** on **2016-05-18**

for **DNV GL**

DNV GL local station: **Approval CMC – Houston**

Approval Engineer: **Kairy Otero**

Brandon D Caraway
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

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Job Id: **262.1-013604-4**
Certificate No: **TAD00000D5**

Manufactured at
FRH160CER/CHR Rotary Deadline Anchor to be manufactured at Dreco Energy Services ULC-Rig Systems, Edmonton, Alberta, Canada

Product description
FRH160CER/CHR Rotary Deadline Anchor

Application/Limitation
Maximum line pull:	160,000 lbf
SFD (API 8C):	2.25
Minimum Design Temperature:	-4 °F
Wire rope diameter:	1 3/8" to 2"
Wire wraps on drum (at all time):	3 ¾
Maximum layers of rope on drum:	1

Type Approval documentation

Tests carried out
Deadline Anchor Load-Fuction Test, described in document D231003388-PRO-001 Rev. 01, Dated 06/28/2012

Marking of product
For traceability the following marking is to be carried out on each product:
1. Serial No.
2. Manufacturer's Name or trademark
3. Marking as specified in API 8C, PSL 1
4. Additional marking at the manufacturer's discretion

Certificate Retention Survey
For retention of the Type Approval Certificate, DNV's surveyor shall perform a survey every second year in accordance with DNV's Standard for Certification No. 1.2.

Other conditions/comments
- The mounting bolts are to be delivered with a 3.1 Certificate according to DNV-OS-E101, Ch.2, Sec. 2, table B3 and tested at a temperature of 0 °F
- Charpy impact testing shall be performed in accordance with API 8C, Ch. 6.3
- Each product is to be surveyed during fabrication in accordance with the requirements for equipment of Category I as defined in DNV's Offshore Standard DNV-OS-E101 Drilling Plant, followed by issuance of a Product Certificate. If the intended installation is DNV classed, then this automatically means DNV product certificate. Fabrication recodrds are to be maintained in accordance with DNV-OS-E101 Ch.3 Sec.3, B102.
- Procedures related to testing, welding, NDE, and other quality control requirements are to be reviewed/approved by DNV's local surveyor
- DNV Ref. Project No. PP158006
- This TAC TAD00000D5 replaces previously issued TAC with certificate number D-6182

END OF CERTIFICATE